What is claimed is:

1. A nanoparticle coating system for medical implants comprising:

one or more drugs nanopulversized to have nanoparticulate sizes of approximately 10 nm to 500 nm and at least one biocompatible polymer.

2. The nanoparticle coating system of claim 1 wherein the drug is selected from the group consisitng of paclitaxel, docetaxel, epothilones, nitric oxide, heparin, aspirin, coumadin, PPACK, hirudin, polypeptide from angiostatin and endostatin, geldanamycin, herbimycin, macbecin, methotrexate, 5-fluorouracil, estradiol, P-selectin glycoprotein ligand-1 chimera, abciximab, exochelin, eleutherobin, sarcodictyin, fludarabine, sirolimus, rapamycin, ABT-578, certican, sulindac, tranilast, rosiglitazone, troglitazone, pioglitazone, darglitazone, englitazone, tetracyclines, VEGF, transforming growth factor (TGF)-beta, insulin-like growth factor (IGF), platelet derived growth factor (PDGF), fibroblast growth factor (FGF), RGD peptide, 17 beta-estradiol, radioactive agents and combinations thereof.

3. The nanoparticle coating system of claim 1 wherein the polymer is non-bioabsorbable a polymer.

4. The nanoparticle coating system of claim 1 wherein the polymer is bioabsorbable.

5. The nanoparticle coating of claim 1 wherein the drug is suspended in a matrix having a plurality of openings.

6. The nanoparticle coating of claim 5 wherein the openings have substantially similar sizes.

7. A medical implant comprising having a coating according to any one of claims 1 through 6.

8. The medical implant of claim 7 wherein the surface is a matrix having variable mesh size.

9. The medical implant of 7 wherein the surface is a matrix having single mesh size.

10. A controlled release coating for an implantable medical device comprising:

a terpolymer-bipolymer blend having a total solubility parameter (δ_T) approximately equal to a bioactive agent's solubility parameter (δ) and wherein δ_T and δ is between 15 $J^{1/2}/cm^{3/2}$ to 25 $J^{1/2}/cm^{3/2}$ and at least one drug agent nanopulversized to have nanoparticulate sizes of approximately 10 nm to 500 nm.

11. The controlled release coating according to claim 10 wherein said coating has a glass transition point (Tg) between approximately -20°C and 50°C.

12. The controlled release coating according to claim 10 wherein said terpolymer comprises relative weight percent concentrations of monomer subunits consisting essentially of vinyl acetate (VAc), alkyl methacrylate (AMA) and n-vinyl pyrrolidone (NVP) and said bipolymer comprises relative weight percent concentrations of monomer subunits consisting essentially of VAc and AMA.

13. The controlled release coating according to claim 12 wherein said relative weight percent concentrations of said monomer subunits in said terpolymer comprises from 7-30% (VAc), 40-75% (AMA) and 19-30% (NVP).

14. The controlled release coating according to claim 12 wherein said relative weight percent concentrations of said monomer subunits in said bipolymer comprises from 5-70% VAc and from 30-95% AMA

15. The controlled release coating according to claim 12 wherein said alkyl methacrylate is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, and hexyl.

16. The controlled release coating according to any one of claims 10 though 15 wherein said δ_T is approximately 15 to 21 and said polymer blend comprises from 40% to 80% bipolymer and from 20% to 60% terpolymer.

17. The controlled release coating according to any one of claims 10 through 15 wherein said bipolymer has a lower Tg than said terpolymer.

18. The controlled release coating according to claim 1 wherein said drug is selected from the group consisting of anti-proliferatives including, but not limited to, macrolide antibiotics including FKBP 12 binding compounds, estrogens, chaperone inhibitors, protease inhibitors, protein-tyrosine kinase inhibitors, peroxisome proliferator-activated receptor gamma ligands (PPARγ), hypothemycin, nitric oxide, bisphosphonates, epidermal growth factor inhibitors, antibodies, antibiotics, proteasome inhibitors anti-sense nucleotides and transforming nucleic acids.

19. The controlled release coating according to claim 18 wherein said antiproliferative is a FKBP 12 binding compound.

20. The controlled release coating according to claim 19 wherein said FKBP 12 binding compound is a macrolide antibiotic.

21. A vascular stent comprising:

a structure comprising a material, said material having a coating thereon comprised of a hydrophobic polymer;

a terpolymer-bipolymer blend over said hydrophobic polymer wherein the difference between the solubility parameters of said terpolymer-bipolymer blend and

said bioactive agent is no greater than 10 $J^{1/2}/cm^{3/2}$ and the total solubility parameter (δ_T) of said bioactive agent-containing terpolymer-bipolymer blend is no greater than 25 $J^{1/2}/cm^{3/2}$ and at least one one drug nanopulversized to have nanoparticulate sizes of approximately 10 nm to 500 nm.

22. The vascular stent according to claim 21 wherein said hydrophobic polymer is parylene or a parylene derivative.

23. The vascular stent according to claim 21 wherein said terpolymer comprises relative weight percent concentrations of monomer subunits consisting essentially of vinyl acetate (VAc), alkyl methacrylate (AMA) and n-vinyl pyrrolidone (NVP) and said bipolymer comprises relative weight percent concentrations of monomer subunits consisting essentially of VAc and AMA.

24. The vascular stent according to claim 23 wherein said relative weight percent concentrations of said monomer subunits in said terpolymer comprises from 7-30% (VAc), 40-75% (AMA) and 19-30% (NVP).

25. The vascular stent according to claim 23 wherein said relative weight percent concentrations of said monomer subunits in said bipolymer comprises from 5-70% VAc and from 30-95% AMA

26. The vascular stent according to claim 23 wherein said alkyl methacrylate is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, and hexyl.

27. The vascular stent according to anyone of claims 21 though 26 wherein said δT is approximately 15 to 21 and said polymer blend comprises from 40% to 80% bipolymer and from 20% to 60% terpolymer.

28. The vascular stent according to anyone of claims 21 though 27 wherein said bipolymer has a lower Tg than said terpolymer.

29. The vascular stent according to claim 21 wherein said drug is selected from the group consisting of anti-proliferatives including, but not limited to, macrolide antibiotics including FKBP 12 binding compounds, estrogens, chaperone inhibitors, protease inhibitors, protein-tyrosine kinase inhibitors, peroxisome proliferator-activated receptor gamma ligands (PPARγ), hypothemycin, nitric oxide, bisphosphonates, epidermal growth factor inhibitors, antibodies, antibiotics, proteasome inhibitors anti-sense nucleotides and transforming nucleic acids.

30. The vascular stent according to claim 29 wherein said antiproliferative is a FKBP 12 binding compound.

31. The vascular stent according to claim 30 wherein said FKBP 12 binding compound is a macrolide antibiotic.